

Towards A Better Future: Improving STEM Education Through New Accreditation Standards

By the year 2040, I hope for an education system where every undergraduate in STEM can be guaranteed an equitable learning environment that delivers quality education – a milestone that has long eluded higher education. Today's system, which continues to discriminate on the basis of race, color, economic status, sexual orientation, gender, and ability (among other factors) raises employment barriers to bright minds and ultimately hinders progress and innovation within the STEM workforce.

2020 will long be remembered as a year of deep-felt adversity by all; however, it will also serve as a reminder of how this adversity was disproportionately felt by populations at the margins of society. While these injustices have long existed, two events this year have highlighted and amplified these struggles. The Black Lives Matter movement reminds us that discriminative practices against black and brown bodies permeate every fabric of life for these population groups, including the higher education system. Amidst uninviting peer dynamics and professor interactions, and administrative tables with little representation to speak against these issues, today's classroom proves hostile towards these students. The COVID-19 epidemic, meanwhile, brings to light the differences in education quality that peer dynamics propagate. While financially well-off students learn remotely from the comfort of their childhood room, or seclude into summer-cabin homes to quarantine with friends, their less fortunate counterparts struggle to find a wi-fi connection in their one-bedroom apartment housing a family of five.

These inequities highlight an urgent need for accountability. One form of accountability currently exists through the Accreditation Board for Engineering and Technology. With its ABET accreditation, the board shares that “students, employers, and the society we serve can be confident that a program meets the quality standards that produce graduates prepared to enter a global workforce”. However, while ABET accreditation holds university and college programs accountable for what students learn, it holds no accountability towards how they learn. To prepare a more equitable system of STEM education, I propose an accreditation board whose purpose is to accredit the quality of college and university STEM programs' instructional pedagogy as it relates to all of its student stakeholders (as opposed to only the majority student body). This basis on which schools are accredited can include – but is not limited to – contingency plans for remote learning, the availability of educational resources that enable students with lower quality education backgrounds to succeed, the availability of administrative resources for marginalized student groups, and sensitivity training offerings and/or resources made available to professors, teaching assistants, and students. In the same way current accreditation is segmented into fields of study, this proposed accreditation will function similarly. It is hoped that what may start as an accreditation tool for STEM education can serve as a pioneering template for other fields of study to adopt for their needs. This tool would run concurrently with, and not in replacement of, current accreditation standards. This accreditation will no longer allow education leaders to hold their institutions to empty standards. As a direct result, I hope to experience an industrial, academic, and philanthropic STEM workforce that embodies and reflects the rich diversity of its constituents in the US.